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THREE NEW *REITHRODONTOMYS* AND TWO NEW *PEROMYSCUS* FROM GUATEMALA

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This is the second preliminary report on the mammals recently collected by Mr. A. W. Anthony in Guatemala for The American Museum of Natural History. In this collection there is a large series of several species of harvest mice and white-footed mice, five of which are hitherto undescribed forms.

My thanks are due to Major E. A. Goldman and Mr. A. H. Howell for kindly comparing these specimens with the large series in Washington and commenting upon their relationships.

Reithrodontomys mexicanus howelli, new subspecies

TYPE.—No. 70500, Amer. Mus. Nat. Hist.; female, adult; Chichicastenango (Santo Tomás) District of El Quiché, Guatemala; 6500 feet elevation; February 12, 1925; collector, A. W. Anthony. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—Size small, tail long, concolor except tip which is pure white; ears short, color nearly uniform cinnamon above, white below; hind feet, ears, and tail dark.

DESCRIPTION.—Fur rather long, soft and full. Color¹ of upperparts cinnamon sparsely darkened on back with blackish hairs, becoming cinnamon-brown on mid-dorsal area; cheeks, sides of shoulders and flanks bright pinkish cinnamon; a blackish ring around eye; tail nearly unicolor, fuscous above, only a shade paler beneath, tip pure white; hind feet dark hair-brown, fore feet, fore and hind toes white; ears fuscous; sides of nose, upper lips and underparts white.

Skull short and relatively broad, with short rostrum and very short nasals; braincase relatively swollen; zygomatica slender, constricted anteriorly; premaxillæ reaching just beyond nasals posteriorly; palatal foramina short, ending posteriorly on a plane with the first molars.

MEASUREMENTS OF TYPE.—Taken in the flesh: total length, 178 mm.; length of tail vertebræ, 104 mm.; length of hind foot, 18 mm.; ear, 13 mm. Skull: greatest length, 22.3 mm.; basal length, 18.3 mm.; zygomatic breadth, 12 mm.; interorbital constriction, 3.5 mm.; nasals, 6.8 mm.; width of braincase, 11.2 mm.; aveolar length upper molar series, 3.4 mm.

This subspecies is clearly in the *mexicanus* group and in some respects approaches specimens of *R. pacificus* from Finca el Cipres, but differs, however, in having longer tail, with tip white, longer fur, and larger skull

¹The names of colors are from Ridgeway's 'Color Standards and Nomenclature.'

with more swollen braincase. In addition to the type, there is one paratype, a sub-adult male which is a shade paler than the type. Chichicastenango, marked on some maps as Santo Tomas, is in the District of El Quiché, about fifteen miles south of the city of that name. Most of the land near the town is planted with corn, but on the hills to the west the forest furnishes plenty of cover. I have named this subspecies after Mr. A. H. Howell, in honor of his extensive work on the American harvest mice.

***Reithrodontomys pacificus*, new species**

TYPE.—No. 79331, Amer. Mus. Nat. Hist.; female, adult; Hacienda, California, six miles from Ocos, Guatemala; sea-level; November 12, 1927; collector, A. W. Anthony. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—Size rather small with relatively small ears. Pelage close and short, tail concolor, about equal in length to head and body or a little longer. General coloration uniform cinnamon buff.

DESCRIPTION.—Upper parts nearly uniform dull pinkish cinnamon, sparsely darkened on dorsal surface with blackish-brown hairs; color brightest on sides; ears clove-brown; tail unicolor, clove-brown; upper surface of both fore and hind feet hair-brown; toes soiled white; sides of nose, upper lips, and underparts white.

Skull relatively small, short and broad; rostrum short; braincase rather flat, squarish and depressed posteriorly; palatal foramina short, ending posteriorly well in front of plane of first molars; auditory bullæ small, ascending branches of premaxilla extending posteriorly beyond nasals; subsidiary enamel folds rather low.

MEASUREMENTS OF TYPE.—Taken in the flesh: total length, 180 mm.; length of tail vertebræ, 92 mm.; length of hind foot, 18 mm.; ear, 15 mm. Skull: greatest length, 21.2 mm.; basal length, 17.5 mm.; zygomatic breadth, 11.2 mm.; interorbital constriction, 3.5 mm.; nasals, 7.1 mm.; breadth of braincase, 10.5 mm.; aveolar length upper series, 2.9 mm.

This species apparently belongs to the *mexicanus* group but is not closely allied to any of its geographical neighbors. It is nearest to *R. mexicanus howelli* but differs in having a shorter tail, shorter pelage and smaller skull with less swollen braincase. Besides the type there are one paratype and nine specimens from Finca Cipres referable to this species. Although the Finca Cipres specimens are somewhat different and show some individual coloration, ranging from cinnamon to cinnamon-buff, they are evidently referable to this species.

Hacienda California is a cattle ranch on the Pacific coast, six miles from Ocos, about the same distance from the Chiapas border and has the usual tropical flora. It is so near the Pacific coast that the surf can be heard. Finca Cipres is 2000 feet elevation, on the Pacific slope, at the base of the Volcan Zunil.

***Reithrodontomys gracilis anthonyi*, new subspecies**

TYPE.—No. 79093, Amer. Mus. Nat. Hist.; female, adult; Sacapulus, Central Guatemala, 4500 feet elevation; March 2, 1928; collector, A. W. Anthony. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—Size small for the genus. Color pale, similar in general characters to typical *R. g. gracilis* but paler.

DESCRIPTION.—Color of upperparts nearly uniform light pinkish cinnamon, being only a shade darker along dorsal area; ears hair-brown, very lightly margined with white; tail fuscous, only slightly paler beneath; fore feet buffy white; hind feet and underparts white.

Skull similar to that of *R. g. gracilis* but larger; rostrum short and broad, braincase relatively narrow and moderately flat; nasals short; zygomata nearly parallel to axis; palatal foramina very short; upper molar series with subsidiary enamel folds rather faintly indicated.

MEASUREMENTS OF TYPE.—Taken in the flesh: total length, 189 mm.; length of tail vertebræ, 112 mm.; length of hind foot, 20 mm.; ear, 16 mm. Skull: greatest length, 22 mm.; basal length, 18 mm.; zygomatic breadth, 11.5 mm.; interorbital constriction, 3.5 mm.; nasals, 7.5 mm.; width of braincase, 10.9 mm.; aveolar length upper molar series, 3.3 mm.

Reithrodontomys gracilis anthonyi is closely related to typical *R. gracilis gracilis* but its paler color and larger size are distinctive. In cranial characters it agrees with the latter in having a short and broad rostrum, short incisive foramina and zygomata nearly parallel to axis of skull; but the skull is much larger.

In addition to the type, there are two paratypes, a semi-adult female and an adult male which is a shade darker than the type. Sacapulus is near the headwaters of the Rio Negro, 25 miles north of Quiché. According to Mr. Anthony's MS.: "This station presents an interesting contrast to most of the surrounding fields. Located in the valley of the Rio Negro, it is a dry, sandy area, surrounded by mountains that receive many times its rainfall. The flora is similar to that of the dry sections of the Rio Motagua, with its fauna differing in a like manner." I have named this species in honor of Mr. A. W. Anthony, who collected the series.

***Peromyscus guatemalensis tropicalis*, new subspecies**

TYPE.—No. 79233, Amer. Mus. Nat. Hist.; female, adult; Chimaltenango, Guatemala, 1500 feet elevation; October 8, 1928; collector, A. W. Anthony. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—Size rather large, color dark. Tail about equal to or longer than head and body, scantily haired and unevenly bicolor. Very similar to typical *R. guatemalensis guatemalensis* but somewhat smaller with shorter ears and closer pelage.

DESCRIPTION.—Fur moderately long, soft and full. Color of upperparts (unworn pelage), chiefly pinkish cinnamon heavily mixed with dusky, the latter concentrated on middle of back from shoulders to base of tail, forming an ill-defined broad dorsal stripe; general effect on sides cinnamon-brown becoming Prout's brown and nearly black toward middle of back; cheeks, sides of shoulders, and lateral line pinkish cinnamon-buff; a broad dark stripe extends from base of whiskers to and around eye and nearly to base of ear; tuft of fur at anterior base of ear nearly black; ear brownish black; underparts buffy white modified by plumbeous basal color; pectoral region broadly overlaid with pinkish cinnamon; fore and hind feet white; tarsal joint dusky brownish; tail unevenly bicolor, dusky above, irregularly blotched with white below.

Skull similar in general to that of *P. g. guatemalensis* but relatively smaller; nasals elongate, frontals constricted; supraorbital ridges weakly developed; brain-case rather large and full but not as broad as in *P. g. guatemalensis* and with smaller molars and shorter molar tooththrows than the latter.

MEASUREMENTS OF TYPE.—Taken in the flesh : total length, 265 mm.; length of tail vertebræ, 131 mm.; length of hind foot, 31 mm.; ear, 16 mm. Skull: greatest length, 34.5 mm.; basilar length, 25.3 mm.; zygomatic breadth, 15.9 mm.; interorbital constriction 5.2 mm.; nasals, 13.8 mm.; aveolar length upper molar series, 4.9 mm.

Besides the type, there are twenty-two paratypes showing very little individual variation in the adult pelage. Immature specimens are much darker, almost sooty black on upperparts. *Peromyscus guatemalensis tropicalis* is apparently closely related to typical *P. g. guatemalensis*, but its smaller ears, relatively shorter tail, richer color and somewhat shorter pelage are sufficient to distinguish it from that subspecies. The type locality Chimoxan is about 40 miles northeast of Coban, the "forest typical of the coast tropics" (Anthony MS.).

Peromyscus grandis, new species

TYPE.—No. 79341, Amer. Mus. Nat. Hist., female, adult; Finca Concepcion, Guatemala; 3750 feet elevation, June 16, 1928; collector, A. W. Anthony. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—*Peromyscus grandis* is one of the largest forms of this genus and is exceeded only in the subgenus *Megadontomys*; about equal in size to *P. zarhynchus* but possessing darker and richer pelage, shorter molar toothrow and other cranial differences.

DESCRIPTION.—Pelage rather long, soft and full. Color of upperparts (worn pelage), rich hazel mixed with black, the hazel everywhere predominating. Middle of back from crown of head to base of tail darker than sides; cheeks, shoulders, and flanks extensively hazel, reaching well up over sides of body. Nose and region about base of whiskers blackish; orbital and antorbital region dark blackish brown not very sharply contrasted; underparts dull white, strongly overlaid with pinkish cinnamon, especially in the pectoral region; fore and hind feet creamy white; tarsal joint brown-

ish; tail unevenly bicolor, dusky above and irregularly blotched with white below; unworn pelage slightly darker than worn pelage and with dark dorsal area more contrasted.

Skull very large, similar to that of *P. zarhynchus*, but general form more massive; rostrum and nasals broader; incisors heavier and molar tooththrows shorter.

MEASUREMENTS OF TYPE.—Taken in the flesh: total length, 315 mm.; length of tail vertebræ, 150 mm.; length of hind foot, 32 mm.; ear, 22 mm. Skull: greatest length, 39 mm.; basilar length, 30 mm.; zygomatic breadth, 17.5 mm.; interorbital constriction, 5.5 mm.; length of nasals, 16.9 mm.; aveolar length of upper molar series, 5 mm.

Peromyscus grandis requires comparison only with *P. zarhynchus*. It is probably not more than subspecifically different from the latter species, but as so little is known of *P. zarhynchus* I am, on Major Goldman's suggestion, treating it as a distinct species. It compares with *P. zarhynchus* as follows: general size, similar; color very similar, but cheeks, shoulders, and flanks somewhat darker and extensively hazel instead of cinnamon rufous; lateral color extending well up over sides of body which in *P. zarhynchus* is more restricted to lower part of sides; underparts and pectoral region overlaid with pinkish cinnamon instead of cinnamon-buff as in *P. zarhynchus*; hind feet whiter. Besides the type there are two adult paratypes, both females, showing very little individual variation. Finca Concepcion is a coffee plantation thirty-five miles east of Coban. The native growth having been cleared, coffee is the principal cover.

